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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,948	12/31/2003	Keiko Hasebe	0425-1107P	6955

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EXAMINER

PAK, JOHN D

ART UNIT PAPER NUMBER

1616

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/747,948

Applicant(s)

HASEBE ET AL

Examiner

JOHN PAK

Art Unit

1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 16 December 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 12/31/03
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Claims 1-14 are pending in this application.

Applicant's election of the invention of Group II in the reply filed on 12/16/2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

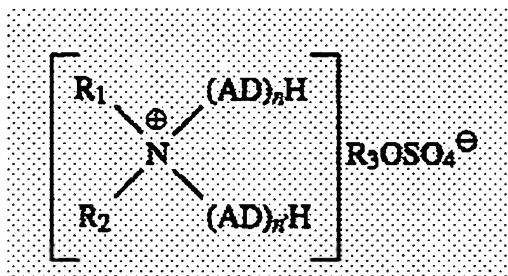
Claim 6 is withdrawn from further consideration as being directed to non-elected subject matter. Claims 1-5 and 7-14 will presently be examined to the extent that they read on the elected subject matter of record (i.e. formula (13) is the nitrogen-containing compound).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

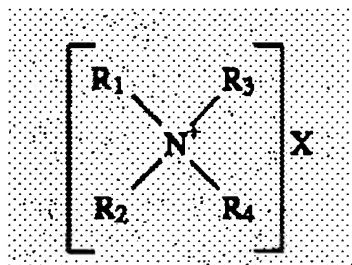
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hioki et al. in view of EP 274369 and Chemical Abstracts 86:84676.

Hioki et al. (US 5,462,912) disclose enhancement of the effect of agricultural compounds with the addition of the following quaternary ammonium salt (column 2, lines 64-67 & column 3, lines 40-65):



$R_1$ ,  $R_2$ , and  $R_3$  can represent  $C_{1-30}$  (column 3, lines 54-55).  $n + n' = 1$  or more, with each variable ranging from 0 to 100. Hioki et al. also disclose that the following quaternary ammonium salts are known to be used with agricultural compounds :



$R_1$ ,  $R_2$  each represent an oleyl group,  $R_3$  represents  $C_{1-3}$  alkyl,  $R_4$  can represent 1-50 oxyethylene group, and  $X$  represents a halogen atom,  $-CH_3SO_4$  or  $-C_2H_5SO_4$  (paragraph bridging columns 1-2). Surfactant other than Hioki's quats are taught, as well as agricultural chemicals and other adjuvants (paragraph bridging columns 3-4). Weight ratio of the adjuvants to agricultural chemicals ranges from 0.1 to 50 (id. & column 7, lines 47-58). The agricultural compounds can be bactericidal, insecticidal, miticidal, herbicidal or plant growth regulating compounds (column 4, lines 36-37; column 8, line 9 to column 9, line 38).

EP 274369 teaches formulating the well-known herbicide glyphosate (10-50 wt%) with a quaternary ammonium salt (2-20 wt%) for stabilization (page 2, line 59, 62-63; page 4, line 14). Various quaternary ammonium salts can be used, wherein suitable anions include chloro, hydroxy and phosphate anions (page 2, lines 60-62). See also the quaternary ammonium list on page 3, which includes polyoxyalkylenated ammonium compounds.

Chemical Abstracts 86:84676 discloses oxalic acid and salts thereof as alleviating the inhibiting effect of hard water on the herbicidal activity of N-phosphonomethylglycines and salts thereof (which encompasses glyphosate). 100% control (with oxalic acid) vs. 35% control (without oxalic acid) is reported.

There are several claimed features that are not expressly disclosed by Hioki et al.

#### Use of instant formula (13) compounds

The cited prior art references disclose many different quaternary ammonium compound for agricultural adjuvant use. The specifics of all of applicant's formula (13) compounds are not provided by Hioki et al., but substantial portions of the R variables are taught by the prior art, as well as the usefulness of myriad anionic species such as halides. Such quaternary ammonium surfactants would thus have been expected to stabilize or enhance the efficacy of the agricultural chemicals and one having ordinary

skill in the art would have been motivated to incorporate them in agricultural formulations.

Incorporation of a chelating agent

The Chemical Abstracts reference definitively establishes the advantage of using oxalic acid and salts thereof, which are readable on applicant's invention. One of ordinary skill in the art would have been motivated to utilize oxalic acid and salts thereof in order to alleviate the effect of hard water and to obtain improved performance of agricultural chemicals.

Ratio of chelating agent, formula (13), agrochemical

The claimed ratio of the chelating agent to quaternary ammonium compound of formula (13) = 0.01-30 mol : 1 mol. The claimed ratio of formula (13) compound to the chelating agent = 0.05-50 : 1 (by weight). Additionally, claim 11 recites a ratio of the formula (13) compound to a second surfactant of 1:50 to 50:1 (by weight).

These ratios are extremely broad, to say the least. It is noted that the amount of the chelating agent by itself is never fixed by any of applicant's claims because all of the ratios are given with the chelating agent as a mixture component. Therefore, the chelating agent reads on virtually any minute amount. Further, given Hioki's weight ratio of the adjuvants to agricultural chemicals ranges from 0.1 to 50 (column 7, lines 47-58), the claimed ratios would have been well within the skill of the ordinary skilled artisan.

Penetration of agricultural chemical into fungi, bacteria, insect, mite, acarid, plant

Although Hioki et al. do not expressly mention enhancing penetration, such effect would have been expected and obvious. The quaternary ammonium compounds are expected to possess surfactant properties and surfactants function to improve the surface tension between the applied active agent and the substrate surface. The necessary consequence is improved penetration since more active agent is exposed to the surface of the substrate.

Claim 12 requires an additional penetration adjuvant. Claim 13 recites a ratio of formula (13) compound to a penetration adjuvant of 1:5 to 5:1. The use of another penetration adjuvant would have been an obvious step for the ordinary skilled artisan. The effect of the applied active agricultural agent would be unobtainable if the active agent could not penetrate the target substrate or target organism. Therefore, use of penetration adjuvant would have been obvious and a ratio such as 1:5 to 5:1 would have been arrived by routine optimization.

Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the teachings of the cited references.

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Any inquiry concerning this communication or earlier communications from the Examiner should be directed to JOHN PAK whose telephone number is **(571)272-0620**. The Examiner can normally be reached on Monday to Friday from 8 AM to 4:30 PM.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's SPE, Sreeni Padmanabhan, can be reached on **(571)272-0629**.

The fax phone number for the organization where this application or proceeding is assigned is **(571)273-8300**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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